REMARKS/ARGUMENTS

Claims 11-30 were examined. Claims 11, 12, 17, 19, 20, 25, 27 and 29 are amended. Reexamination and reconsideration of claims 11-30 are respectfully requested.

Formal Matters

A new declaration under 37 C.F.R. §1.63 is being submitted concurrently herewith to address the typographical error identified in the Office Action of November 28, 2003.

Claim Rejections Under 35 U.S.C. § 112

The Examiner has rejected claims 11, 12, 17, 19, 25, 27 and 29 under 35 U.S.C. §112, first paragraph as allegedly failing to comply with the written description requirement for not describing the phrase "world coordinate system" in the specification. Such a rejection is traversed in part and overcome in part as follows:

Claims 11 and 19, as currently amended, recite a system having an endoscope located within a first coordinate system, and an input device that can receive a command from a user to move the endoscope. More specifically, claims 11 and 19 also recite a controller that receives the user command and transforms the movement of the endoscope from the first coordinate system to a movement of the endoscope in the second coordinate system. Claim 27 similarly recites a method for controlling a movement of an endoscope located in a first coordinate system by transforming movement of the endoscope in the first coordinate system to a movement in a second coordinate system, and sending output signals to move first and second actuators in the second coordinate system so that the endoscope moves along and up-down axis of the first coordinate system.

Referring to Figures 1 and 2 and the accompanying text on page 10, line 12 to page 11, line 27, a robotic arm assembly is disclosed including an actuator located in a first coordinate system having a z axis. A second and third coordinate system are disclosed having z' and z" axis respectively, the z" axis corresponding to the longitudinal axis of the endoscope 18. The movement of the endoscope is converted from the second coordinate system to the first

coordinate system via a transformation matrix as described on page 18, line 13 to page 19, line 14. Thus, transformation of movement of an endoscope from a first coordinate system to a second, as recited in amended claims 11, 19 and 27, is taught in the written description. Therefore, rejection of claims 11, 19 and 27 (and dependent claims 12, 17, 20, 25 and 29) under § 112 is improper and withdrawal of such a rejection is respectfully requested.

Claim Rejections Under 35 U.S.C. §102

The Examiner rejected claims 11-30 under 35 U.S.C. §102 as being anticipated by U.S. Patent No. 5,060,632 issued to Hibino et al. Such rejections are traversed in part and overcome in part as follows:

Claims 11 and 19, as currently amended, recite a system having an endoscope located within a first coordinate system, first and second actuators located within a second coordinate system, and an input device that can receive a command from a user to move the endoscope. In particular, claims 11 and 19 recite a controller that receives the user command and transforms the movement of the endoscope in the first coordinate system to a movement of the endoscope in the second coordinate system to move said first and second actuators in the second coordinate system so that the endoscope moves along the up-down axis of the first coordinate system regardless of the orientation of the second coordinate system with respect to the first coordinate system. Claim 27 similarly recites a method for controlling a movement of an endoscope located in a first coordinate system by transforming movement of the endoscope in the first coordinate system to a movement in a second coordinate system, and sending output signals to move first and second actuators in the second coordinate system so that the endoscope moves along and up-down axis of the first coordinate system.

The use and advantages of such a system can be understood with reference to Figs 1-3 and the accompanying text on page 16, line 21 to page 17, line 10. By converting the movement of the endoscope in a first system to coordinates in a second coordinate system, the movement as seen by the surgeon can always be in the same direction as the movement of the input device. Thus, for example, when the surgeon presses a foot switch to move the endoscope

up, the scope can always appear to move in the up direction, regardless of the orientation of the surgeon with respect to the endoscope.

Transforming movement of an endoscope from a first coordinate system to a corresponding movement in a second coordinate system, as recited in the claims of the present application, has not been shown to be disclosed nor suggested in the cited art. A single cited art reference must teach each and every element of the claim to establish anticipation under 35 U.S.C. §102. M.P.E.P. §2131. The Court of Appeals for the Federal Circuit has held that, "the identical invention must be shown in as complete detail as is contained in the .... claim." *Richardson v. Suzuki Motor Co.,* 9 U.S.P.Q.2d 1913, 1920 (Fed. Cir. 1989). The Hibino et al. reference is directed toward an endoscope apparatus which allows an insert section to be manipulated within a body cavity by vibrating a part of the insert in vertical or horizontal directions. Col. 1, lines 50-68. Specifically, Hibino et al. describes an endoscope apparatus having joy stick 8 for bending a bendable portion 7, joystick 9 for rotating or advancing insertion section 2, and on/off switches 10 and 11. (See Figs. 9-11 and 29, and the text on col. 18, line 40 to col.19 line 51.) A bending wire 13 is attached to a bending drive motor 12, so that a corresponding degree of tilting of the joystick 8 advances drive motor 12 to bend the bendable portion 7 upwards, downwards, rightwards and leftwards. As Applicants understand Hibino et al., signals from the input devices (joysticks 8, 9) are sent directly from a controller 16 to the drive motors 12a, 12b without any coordinate transformation.

Page 4 of the Office Action dated October 28, 2003 asserts that col. 29 lines 41-54 of the Hibino et al. reference teaches a "controller that receives a user command and transforms the movement of the endoscope in the endoscope coordinate system to a movement of the endoscope in the world coordinate system." However, the cited text simply shows the same direct-motion endoscope control system (video processor 17) as described above, except for removal of the a video processor 17. Furthermore, applicants were unable to find any teaching or suggestion anywhere in the Hibino et al. reference of transforming motion of an endoscope from one coordinate system to another.

Because the cited art has not been shown to teach each and every element of the claim, anticipation cannot be established under 35 U.S.C. §102. For the foregoing reasons, the

present application is patently distinguished from Hibino et al., and rejection of claims 11, 19 and 27 (and dependent claims 11-18, 20-26, and 28-30) under 35 U.S.C. §102(b) is not appropriate. Applicants therefore respectfully request withdrawal of this rejection and the allowance of independent claims 11-30.

Dependent claims 11-18, 20-26, and 28-30, in addition to being allowable as depending on allowable claims 11, 19 and 27, each recite additional elements not taught or suggested by the cited reference. For example, claims 17, 25 and 29, as amended, each recite transforming motion of an endoscope between first and second coordinate system in accordance with a plurality of transformation equations. Page 5 of the office action asserts that col. 70 lines 28-33 of the Hibino et al. reference teaches "transformation between the endoscope coordinate system and the world coordinate system performed in accordance with a plurality of transformation equations." However, the cited text only shows conversion of position data of the bent state of the endoscope as received from signals sent from pressure sensitive elements. Such position data might be used, for example, to try to gain access to a particular surgical site. However, Applicants were unable to locate any teaching or suggestion in the Hibino et al reference for using transformation equations to transform the movement of the endoscope in a first coordinate system to a movement of the endoscope in a second coordinate system so that the endoscope moves along an axis of the first coordinate system regardless of the orientation of the second coordinate system with respect to the first coordinate system. Absent any disclosure for the claimed endoscope movement transformation, the rejections should be removed.

Claim Rejections Under 35 U.S.C. § 103

The Examiner rejected claims 18, 26, and 30 under 35 U.S.C. §103(a) as being unpatentable over U.S. Patent No. 5,060,632 issued to Hibino et al. in view of U.S. Patent No. 5,086,401 issued to Glassman et al. Such rejections are traversed as follows:

Glassman et al. teaches an autonomous robotic system incorporating a multi-degree of freedom robot to carry out a preset operation, such as preparing a femoral cavity to have a precise shape for receiving a cementless prosthetic hip implant. The Glassman et al. device does not move an instrument in response to an input command as recited in the presently

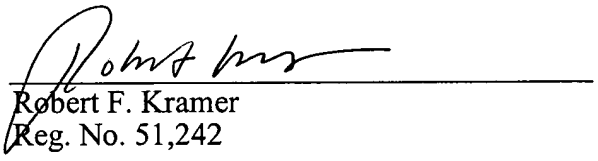
claimed invention. As neither the Hibino et al. nor Glassman et al., individually nor in combination, teach of transforming a user command to move an endoscope in a first coordinate system to a movement in a second coordinate system, rejection of claims 18, 26, and 30 under §103(a) is improper.

CONCLUSION

In view of the foregoing, Applicants believe all claims now pending in this Application are in condition for allowance. The issuance of a formal Notice of Allowance at an early date is respectfully requested.

If the Examiner believes a telephone conference would expedite prosecution of this application, please telephone the undersigned at 650-326-2400.

Respectfully submitted,



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